Forgiveness by God and Human Forgivingness: The Centrality of the Religiosity Makes the Difference

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Introduction

In Christianity, forgiveness in human relations is an important social value. Moreover, forgiveness is also crucial for the construction of the relation between God and human. Many Christians believe in a forgiving God and

report experiences of forgiveness by God. While sharing a common semantic core, these beliefs and experiences of transcendent forgiveness and forgivingness in social contexts are located on different levels of reality and serve different functions for the individual. This raises the question of whether and how forgiveness by God and social forgivingness are mutually related. The main hypothesis of the present paper is that the psychic and social relevance of the reported experience of forgiveness by God depends of the centrality of the personal religious meaning system in the individual's personality. Centrality serves as a moderator variable, indicating the general relevance and psychic presence of religious contents in the individual. Only if the religious system has a central position in the emotional and cognitive architecture in the individual's psychic systems is the content of religious beliefs and experiences powerful enough to influence the experience and behaviour of the individual in nonreligious areas of life. This holds also in the specific case of the linkage between the religious content of experiencing forgiveness by God and forgivingness in the nonreligious area of human relations.

Religiosity and Forgiveness

Previous research have shown positive relationships between people's selfreported values, attitudes, and behaviours regarding forgiveness and a variety of religious variables such as frequency of church attendance and personal prayer, self-rated religiosity, intrinsic religious orientation, religiosity, and feelings of closeness to God (cf. McCullough & Worthington, 1999; Rye, 2005; Tsang, McCullough, & Hoyt, 2005; Worthington, 2005). For example, within broadly Christian societies with higher self-assessed religiosity, the value of forgiveness is rated higher (e.g., Edwards et al., 2002; Macaskill, 2005; Poloma & Gallup, 1991; Tsang, McCullough, & Hoyt, 2005). Religiosity is also related to moral reasoning about forgiveness. For example, Enright, Santos, and Al-Mabuk (1989) found that individuals with stronger religious beliefs tended to reason about forgiveness in a more sophisticated way than those individuals with weaker religious beliefs.

Religiosity and Forgivingness

Forgivingness refers to individual differences in the willingness to forgive others across time, relationships, and situations (e.g., Allemand, 2008; Berry, Worthington, Parrott, O'Connor, & Wade, 2001; Brown, 2003; Mullet, Houdbine, Laumonier, & Girard, 1998). There is evidence that, on average, individuals with higher religiosity are more willing to forgive others than less

religious individuals (Edwards et al., 2002; Rye, Loiacono, Folck, Olszewski, Heim, & Madia, 2001). Gorsuch and Hao (1993) found that higher religiosity in individuals was associated with more self-reported motivation both to forgive and to work harder to forgive others. Likewise, Mullet, Barros, Frongia, Usa., Neto, & Shafighi (2003) reported a positive relationship between religious involvement (i.e., belief in God and attendance in church) and forgivingness.

Religiosity and Forgiveness by God

There are a number of different dimensions or sources of forgiveness (cf. McCullough, Hoyt, & Rachal, 2000; McCullough & Witvliet, 2002). We distinguish personal, interpersonal, and transcendent sources. People may forgive themselves or may seek forgiveness by others, they may receive forgiveness by other individuals, and finally they may find forgiveness by God or a higher power. Surprisingly there are only a few studies investigating forgiveness by God. Walker and Gorsuch (2002) reported a correlation of r = .48 between the self-reported importance of religious faith, which can be seen as a measure of centrality of the religious meaning system, and a four-item measure of receiving God's forgiveness, indicating that high importance of faith is related to high scores in experiencing God's forgiveness. This result suggests that accessibility of the transcendent source of forgiveness depends on the centrality of religiosity. This suggestion is supported by Rye and Pargament (2002). They pointed out that for study participants considering themselves as religious, one of the most common forgiveness strategies reported is to ask God for help and/or support when trying to forgive others or to seek for forgiveness by God.

Forgiveness by God and Forgivingness

The relationship between forgiveness by God and interpersonal forgiveness has rarely been studied. Toussaint, Williams, Musick, and Everson (2001) studied the relationship between forgiving others, being forgiven by God, and health variables. They used a two-item index to assess the degree to which respondents felt forgiven by God (i.e., "Knowing that I am forgiven for my sins gives me the strength to face my faults and be a better person," "I know that God forgives me"). They found that forgiving others tends to exert a more beneficial effect on psychological distress and life satisfaction than forgiveness by God. Unfortunately they did not report the correlation between the variables forgiving others and forgiveness by God. Krause and Ellison (2003) replicated the finding of Toussaint, Williams, Musick, & Everson (2001) regarding

the well-being effects of forgiveness in a nationwide survey of older adults. Their research reveals that participants who are more likely to believe that God has forgiven them for things they have done reported fewer depressed affect symptoms and slightly higher satisfaction with life than the participants who have lower scores in forgiveness by God. With respect to the link between forgiveness by God and forgiving others, their findings suggest that older adults who believe God forgives them are more likely to forgive others right away than those who do not believe God has forgiven them. However, forgiveness by God was assessed only by the single item: "I believe God has forgiven me for things I've done" (Krause & Ellison, 2003).

It is noteworthy, however, that Toussaint, Williams, Musick, & Everson (2001) and Krause and Ellison (2003) operationalised forgiveness by God merely as a belief and not as a personal experience. It can be expected that experiences of forgiveness by God have a deeper impact on general experiences and behaviours of individuals than the mere belief in a forgiving God. While the belief in forgiveness by God may be held without personal experience and may be held even only superficially, the experience of forgiveness by God necessarily is a much deeper phenomenon validating or creating the respective belief. The use of belief measurements thus questions the general conclusion of both studies reported above that forgiveness by God is a weak source of forgivingness.

Model of Religiosity

In previous research on forgivingness, different religious variables were used in order to measure the participants' religiosity. These variables, however, were not integrated into a comprehensive model of religiosity. In our research, we understand religiosity as a system of personal constructs (Huber, 2003, 2007). In the model, the main parameters of the religious construct system are its centrality and its content. The centrality parameter defines the position of the religious construct system within the ensemble of all construct systems in a given personality. The more centrally the religious construct system is positioned, the more frequently it will be activated and the broader and more intensive its influence will be on other personal construct systems and thus on that person's experience and behaviour. While the centrality parameter is related to the strength of the religious construct system's influence, the content parameter determines the "direction" of its influence. For example, a personal religious construct system dominated by constructs of a loving and forgiving God leads experiences and behaviours in a different direc-

tion than a religious construct system dominated by constructs of a punishing God. Consequently, the experience and behaviour will differ vastly. The extent to which specific religious contents will actually influence the individual's experience and behaviour depends on the centrality of the individual's religious construct system. Using Max Weber's method of constructing ideal types (cf. Krech 2006), we differentiate between three positions of the religious construct system, which lead to qualitatively distinguishable dynamics:

- Central position—highly religious: With highly religious individuals, the religious system occupies a central position within the personality. From this position, religious contents exercise a strong influence on other psychological systems. As a consequence, nonreligious fields of experience and action such as politics often appear in a religious light. Furthermore, it is postulated that centrally positioned personal religious systems are characterised by a high degree of internal differentiation. Highly religious people are therefore capable of differentiating a variety of aspects of any given religious content, which leads to an especially rich set of religious experiences and behaviours. The ideal type of the highly religious individual has a number of features in common with the ideal type of an intrinsic religious orientation (Allport & Ross, 1967). Of special relevance are the features of the functional autonomy of religious motives as discussed by Allport as well as the religiosity's high degree of internal differentiation (Allport, 1976, pp. 65-74).

- Subordinate position—religious: Religious individuals are equipped with a personally constructed religious system that nonetheless has a subordinate position within the individual's cognitive architecture. From this position, it is only able to exert a weak influence on other psychological systems. As a consequence, nonreligious fields of experience and action rarely appear in a religious light. Furthermore, it is postulated that the degree of internal differentiation is significantly lower in the case of a subordinate compared to a central position. Correspondingly, religious experience and behaviour is not as multifaceted. This ideal type has a number of features in common with the ideal type of an extrinsic religious orientation (Allport & Ross, 1967).

- Marginal position—nonreligious:
  The group of the nonreligious is characterised by the fact that religious contents and practices hardly appear in the individual's life horizon. This raises the question as to whether or not a personally constructed religious system exists here at all. It is presumed

that religious meanings are generally of an ad hoc character and formed on the basis of other personally constructed systems. If a religious system exists at all here, it is likely to be rendered unstable due to the infrequency of activation. The psychological relevance of religious contents and the level of differentiation of their cognitive representations should be lower than in the religious group.

From the definition of these ideal types it becomes clear that there should be interactions between centrality and content of religiosity. Using data of the global Religion Monitor (N = 17,878 from 21 nations; Bertelsmann Foundation, 2009), Huber (2008a, 2009) has recently shown the interreligious validity of two general hypotheses: (1) The differentiation hypothesis postulates that people with a central position of the religious construct system have a more differentiated representation of religious contents than people with a subordinate position of the religious construct system. This assumption was supported by the fact that cognitive representations of fifteen religious emotions were most differentiated in the highly religious group (with a central position of the religious construct system). (2) The relevance hypothesis postulates that religious contents have the strongest influence on the experience and behaviour in corresponding nonreligious areas in people with a central position of the religious construct system. This assumption was supported by the relation between religion and politics. The results show that a political conceptualization of the participant's theology has the strongest impact on the general relevance of politics in the highly religious group.

The Present Study

Making use of the typology of Huber's (2003, 2007) model, the present study investigated the relevance hypothesis in the relationship between the religious content of forgiveness by God and the nonreligious content of forgivingness. The moderating role of centrality of religiosity should emerge in different correlation patterns dependent on the position of the religious construct system within the personality. In a first step, we expect to be able to replicate former findings concerning the positive correlation between religiosity and forgivingness. Specifically we expect forgiveness by God to be positively correlated with forgivingness. Moreover, we expect a substantial and positive forgiveness by God and forgivingness correlation between forgiveness by God and centrality of religiosity. In line with previous studies (e.g., Mullet, Barros, Frongia, Usa., Neto, &

Shafighi, 2003) we expect a positive—though smaller—correlation between forgivingness and centrality of religiosity, because the disposition to forgive others is conceptualised as a nonreligious construct.

In a second step, we analyse the moderating role of centrality of religiosity for the forgivingness and forgiveness by God association. First, we present a conventional moderation analysis. We expect a significant interaction effect with higher association between forgivingness and forgiveness by God for higher levels of centrality. Additionally, we present an alternative analysis strategy with separate correlational analyses for the group of the highly religious and the group of the religious, respectively. With the central religious construct system, we expect a substantial correlation, whereas with the subordinate religious system, a considerably smaller correlation. While this strategy loses some information in switching to an ordinal scale for religiosity, in the discussion we present arguments that its application might be favourable for comparative research.

Method

Sample and Procedure

The sample consisted of 472 participants (191 males and 281 females). The mean age of participants was 53.3 years (SD = 18.7). All participants were recruited at several Catholic and Protestant churches from the cities of Bad Kreuznach and Bad Sobernheim in the western part of Germany. Of the sample, 56.6% were Catholics and 43.4% were Protestants. Participants completed a questionnaire individually at home and sent them back to the researchers. Parts of the questionnaire were items on forgivingness, forgiveness by God, and centrality of religiosity. Participants did not receive any compensation for their participation in the study. For the present study, we explicitly focused on attendees of churches because in such kinds of samples we can presuppose familiarity with religious meanings and experiences such as the experience of forgiveness by God. Thus, despite representing a large portion of the German population, only 13 participants (2.8% of the sample) were classified as nonreligious (marginal religious construct system; for the classification procedure, see below). Because of the small size of this group, we had to exclude these participants from our analysis. This poses no threat for the test of our main hypothesis because for nonreligious participants there may not be expected any effect of personal

religious constructs anyway. The comparison of the religious and the highly religious groups provides us with a stricter challenge for our hypotheses. The resulting sample for the analyses thus consists of 459 participants.

Measures

Forgiveness by God

According to Stark (1965) "the essential element characterizing religious experience… is some sense of contact with a supernatural agency" (p. 98). In this line of reasoning, the Structure of Religiosity Test (SRT, cf. Huber, 2008b) quantifies the experience of forgiveness by God by the frequency of situations in which it is experienced. Experience of forgiveness by God (and not only the belief in forgiveness by God as measured by previous research) was assessed with a five-item measure (e.g., "How often do you experience situations, in which you have the feeling of being forgiven by God?" ". . . that God delivers you from a debt?" ". . . that God is merciful to you?"). Participants responded to each item on 5-point Likert-type rating scales ranging from 1 (never) to 5 (very often). Higher scores reflect higher frequency of the experience of being forgiven by God. In the present study, the reliability coefficient (Cronbach's alpha) of the measure was $\alpha = .90$.

Forgivingness

One common method in assessing forgivingness involves presenting participants transgression vignettes and asking for their hypothetical reactions (e.g., Berry, Worthington, Parrott, O'Connor, & Wade, 2001; Rye, Loiacono, Folck, Olszewski, Heim, & Madia, 2001). We utilised a measure with eight short scenarios encompassing a variety of transgressions, e.g., "A close acquaintance lies to you to gain personal advantage for herself. Later she says she is sorry and wants to change"; "A friend conscientiously abuses your trust for her personal gain and isn't sorry about doing so" (cf. Allemand, Sassin-Meng, Huber, & Schmitt, 2008). Participants were instructed to imagine that the scenarios had happened to them and then to consider the likelihood that they would be willing to forgive the wrongdoer. For each scenario, participants respond on 5-point Likert-type rating scales ranging from 1 (not at all likely) to 5 (extremely likely). Higher scores reflect higher forgivingness. Data from five previous studies with a total sample of 1824 participants affirm the psychometric quality and construct validity of this measure (Allemand, Sassin-

Meng, Huber, & Schmitt, 2008). In the present study, the reliability coefficient (Cronbach's alpha) of the measure was $\alpha = .84$.

Centrality of Religiosity

Centrality of religiosity was assessed with the Centrality Scale in its 10-item form (Huber, 2003, 2007, 2008a). This measure bases on five core dimensions of religiosity: intellect, ideology, experience, private practice, and public practice (cf. Glock, 1962; Huber, 1996; Stark & Glock, 1968). The rationale of the measure is that the five core dimensions of religiosity grasp a representative cross-section of the activation of an individual's religious construct system. Activation is quantified by the self-assessed frequency and intensity of activation of each of the five core dimensions. It can be assumed that both the intensity and frequency of an activation of the religious construct system increases the likelihood that this construct system is central in the cognitive architecture of an individual's personality. Each of the five dimensions is assessed by two items:

1. Intellect (e.g., "How often do you think about religious questions?")
2. Ideology (e.g., "In your opinion, how high is the probability that God really exists and that he is not just an idea made up by human beings?")
3. Experience (e.g., "How often do you experience situations where you have the feeling that God intervenes in your life?")
4. Private practice (e.g., "How often do you pray?")
5. Public practice (e.g., "How often do you attend religious service?")
6.

Participants responded to items on a Likert-type rating scale ranging from 1 (*not at all/never*) to 5 (*very/very often*). The mean of all 10 items was used as an index of centrality of religiosity (cf. Huber, 2003). Higher scores reflect more pronounced centrality of religiosity. In the present study, the reliability coefficient (Cronbach's alpha) for the centrality scale was $\alpha = .88$.

Classification of Religiosity

The classification of the participants in the categorical centrality groups for the present study follows the semantics of the response scale (Huber, 2008a; Huber & Krech, 2009). Categories 4 and 5 (frequency: often/very often; importance: quite/very) indicate a clear presence of the religious construct system. Consequently, we classified participants with mean scores of 4 or

higher in Centrality of Religiosity measure as highly religious. Categories 1 and 2 (frequency: never/rarely; importance: not at all/not very much) indicate at most a marginal presence of the religious system. Consequently, we classified participants with mean scores of 2 or lower as not religious. Participants in between were classified as religious. These display a background presence of the religious system. Two further aspects are crucial for the logic of this classification. First, the five specific dimensions cover a representative cross-section of religious experience and behaviour. Therefore it seems appropriate to assume that the measure reflects the Centrality of Religiosity. Second, it must be emphasised that the empirical classification of an individual as "religious" or "highly religious" obeys a probabilistic logic. The goal is not to make an ontic statement about a person but merely to maximise the probability that the theoretically defined attributes actually apply to an individual classified as religious or highly religious.

Results

Bivariate correlations, means, and standard deviations among the investigated variables are depicted in Table 1. In the following, descriptive analyses are presented to evaluate variations in responses to the variables of interest as a function of demographic characteristics (gender and age) and religious affiliation. A series of bivariate correlations and hierarchical multiple regression analyses follows to assess the relationships between forgiveness by God and forgivingness, and the potential moderating role of centrality of the religious construct system in the forgiveness by God-forgivingness association.

Table 1. Correlations, Means, and Standard Deviations for the Study Variables

Variable	1	2	3
1. Forgiveness by God	-		
2. Forgiveness	.28***	-	
3. Centrality of Religiosity	.66***	.26***	-
Possible range	1-5	1-5	1-5
M	2.42	2.98	2.97
SD	0.88	0.66	0.60

Note. N = 459.

*** $p < .001$.

Descriptive Analyses

Independent t-tests revealed that men and women did not differ in forgiveness by God, $t(457) = 1.14$, ns, $\eta2 = .003$; men: M = 2.36, SD = 0.96; women: M = 2.45, SD = 0.83, and in forgivingness, $t(457) = 1.53$, ns, $\eta2 = .005$; men: M = 3.04, SD = 0.60; women: M = 2.94, SD = 0.69. No gender differences were also found with respect to centrality of religiosity, $t (457) = 1.81$, $p > .07$, $\eta2 = .007$; men: M = 2.91, SD = 0.65; women: M = 3.02, SD = 0.56. Next, bivariate correlations were conducted to evaluate age variations. In contrast to previous research showing that forgivingness varied as a function of age, with older adults, on average, being more willing to forgive compared to younger adults (e.g., Allemand, 2008; Mullet, Houdbine, Laumonier, & Girard, 1998), no significant association with age was found for the forgivingness index in the present sample ($r = .04$). However, age correlated significantly and positively with forgiveness by God ($r = .20$, $p < .001$), and centrality of religiosity ($r = .30$, $p < .001$). Hence, we did include age as control variable in the subsequent analyses.

Finally, we examined potential differences in religious affiliation (i.e., Catholics vs. Protestants) with respect to our study variables. With respect to forgiveness of God, no significant religious affiliation effect was found, $t(457) = 1.79$, $p < .08$, $\eta2 = .007$; Catholics: M = 2.48, SD = 0.87; Protestants: M = 2.33, SD = 0.90. Catholics tended to show slightly higher scores in forgivingness (M = 3.04, SD = 0.69) than Protestants (M = 2.91, SD = 0.61), $t(457) = 2.07$, $p < .05$. However, the religious affiliation effect was small ($\eta2 = .009$). Finally, Catholics tended to show higher scores in centrality of religiosity (M = 3.08, SD = 0.56) than Protestants (M = 2.84, SD = 0.62), $t(457) = 4.35$, $p <.001$, $\eta2 = .040$. Consequently, we also did include religious affiliation as a control variable in the subsequent analyses.

Bivariate Associations

We found support for our hypothesis that experience of forgiveness by God is significantly and positively related to forgivingness (see Table 1). Controlling for age and religious affiliation in a multiple regression analysis did not alter the association ($\beta = .27$, $p < .001$) and reflects a small- to medium-sized effect (Cohen, 1988). Table 1 further shows a significant and large correlation between forgiveness by God and centrality of religiosity and a small correlation between forgivingness and centrality of religiosity. In line with our hypothesis, forgivingness was less strongly related to centrality of religiosity

than forgiveness by God, $t(456) = 9.53$, $z = 8.65$, $p < .001$. Controlling for age and religious affiliation did alter the associations only to a small degree ($\beta = .61$, $p < .001$ and $\beta = .23$, $p < .001$, respectively).

Moderation Analyses

In a first analysis, standard procedures for testing moderation effects are employed (e.g., Aiken & West, 1991; Cohen, Cohen, West, & Aiken, 2003). First, forgiveness by God scores and centrality of religiosity scores were centred on their respective means. Second, since age was significantly related with the predictor variables—but not with the dependent (criterion) variable—we regressed centred forgiveness by God and centred centrality of religiosity, respectively, on age, and used the unstandardised residuals as predictor variables. Third, the term reflecting the interaction between the predictor variables was created. Finally, to analyse the data, we performed a hierarchical multiple regression analysis predicting forgivingness scores. Because religious affiliation was significantly related both with the moderator variable and the dependent (criterion) variable, we entered religious affiliation (0 = Catholics, 1 = Protestants) at step 1 in the regression analysis and thus controlled for its potential effects. The predictor variables were then entered at step 2. The interaction term was entered after these main effects at step 3. A significant interaction effect emerged ($B = .17$, $SE_B = .05$, $\beta = .16$; ΔF (1, 454) = 11.68, $p < .001$, $\Delta R^2 = .02$), indicating a unique association of forgiveness by God X centrality of religiosity interaction with forgivingness. This parallels the finding of the analysis based on categorical groups. Overall, the predictors explained 11% of the total variance in forgivingness. Simple slope tests were then conducted to clarify the nature of this interaction (see Aiken & West, 1991, p. 12-22). They revealed that at higher levels of centrality of religiosity (1 *SD* above the mean), forgiveness by God was significantly related to forgivingness ($\beta = .42$, $p < .001$). In other words, participants with high centrality of religiosity scores and high forgiveness by God scores tended to be more willing to forgive than those with high centrality of religiosity scores and low forgiveness by God scores. However, at lower levels of centrality of religiosity (1 *SD* below the mean), forgiveness by God was not statistically significantly related to forgivingness ($\beta = -.03$, *ns*). Specifically, participants with low centrality of religiosity scores tended to show low willingness to forgive irrespective of the levels forgiveness by God (low versus high). Fig. 1 shows the results of this analysis.
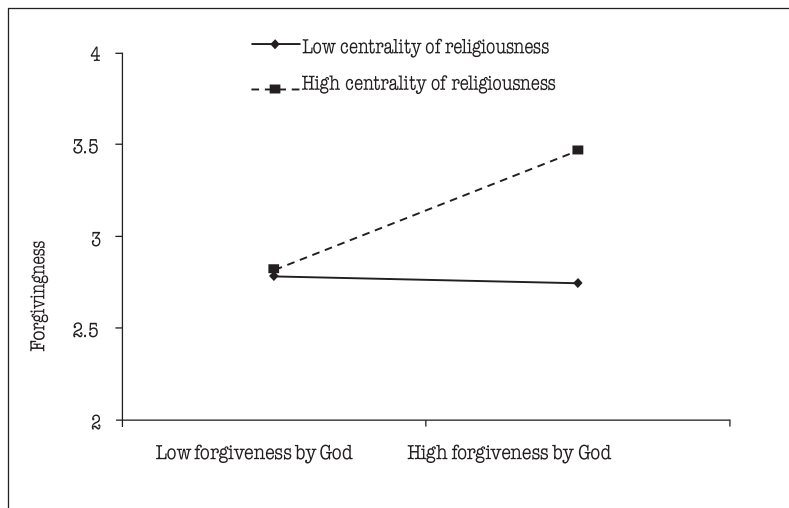
Fig. 1. Forgivingness as a function of forgiveness by God and centrality of religiosity.

As mentioned above, a second analysis treats centrality of religiosity as a categorical variable according to Huber's (2003) typological distinction and investigates the associations between forgiveness by God and forgivingness separately for those with a central and a subordinated position of the religious construct system in personality. Of the participants, 57.3% ($n = 263$) had a central religious construct system. The mean values for forgiveness by God was 2.80 ($SD = 0.69$) and 3.09 ($SD = 0.66$) for forgivingness. One hundred and ninety-six, or 42.7% of the participants were classified as having a subordinate position of the religious construct system. Their mean values for forgiveness by God were 1.89 ($SD = 0.84$) and 2.83 ($SD = 0.63$) for forgivingness. To test our moderation hypothesis, we investigated the association between forgiveness by God and forgivingness separately for those participants with a central and a subordinated position of the religious construct system, respectively. We controlled for age and religious affiliation by means of partial correlations. The association between forgiveness by God and forgivingness was r = .30 ($p < .001$) for those participants with a central position, and $r = .10$ ($p > .10$) for those participants with a subordinate position of the religious construct system. The two correlations significantly differed ($z = 2.20$, $p < .05$). To summarise, both ways of investigating the moderating role of centrality of religiosity supported our hypothesis.

Discussion

The present study addresses the relationship between the religious variables centrality of religiosity and forgiveness by God, and the nonreligious variable forgivingness. In a first step, we investigated bivariate relations between these variables and were able to replicate previous findings (Krause & Ellison, 2003; Walker & Gorsuch, 2002). We first found a significant and positive association between forgiveness by God and forgivingness. Second, consistent with our expectation, we found a large positive correlation between forgiveness by God and centrality of religiosity, suggesting that people with increasing centrality experience God's forgiveness more frequently. Third, consistent with previous research (e.g., Edwards et al., 2002; Mullet, Barros, Frongia, Usa., Neto, & Shafighi, 2003; Rye, Loiacono, Folck, Olszewski, Heim, & Madia, 2001), forgivingness was significantly and positively related with centrality of religiosity. As predicted, forgivingness as a nonreligious variable was significantly less strongly related to centrality of religiosity than forgiveness by God was.

The central result of the present research is that the association between forgiveness by God and forgivingness is moderated by the centrality of religiosity. We presented two analyses showing that only for highly religious individuals a strong association between forgiveness by God and forgivingness exists, while for religious individuals with a subordinate position of their religious construct system either no or only a weak association was observed in both analyses, respectively. This finding confirms our general hypothesis theoretically derived from Huber's model of religiosity, which differentiates two parameters: the centrality and the contents of personal religious construct systems (Huber, 2003, 2007, 2008a, 2009). It predicts that only with the religious construct system being central in personality, religious contents should substantially influence related nonreligious constructs. With a subordinate religious construct system, in contrast, this relation was predicted to be weak.

The present findings are supported by a previous study by Huber (2007, p. 227) on the same subject. In a small pilot study with 83 participants, he found a similar pattern of correlations using the same measures. The highly religious group (n = 44) showed a substantial and significant correlation between forgiveness by God and forgivingness (r = .41, p < .01), whereas for the religious group (n = 39) the correlation coefficient was only .16 (p > .10). These findings support our suggestion that the dynamics of contents dependent on centrality of the religious construct system is a general phenomenon

and conclusions must not be restricted to the specific sample investigated. Further support of the generalisability of the moderating role of the centrality of religiosity for the association between religious and nonreligious content variables in the field of psychology of religion is the concurrence with findings of the global and interreligious survey of the Religion Monitor investigating representative samples in 21 nations covering five world religions (Bertelsmann Foundation, 2009). The relevance hypothesis was found to explain the experienced relation between religion and politics. The correlation between the self-reported influence of religiosity on political opinions, a religious content which can be characterised as "political theology", and the self-reported importance of politics as an area of life, a related nonreligious content increases with the centrality of the religious construct system measured with the centrality scale. While the correlation was high for the highly religious ($r = .41$; $n = 8,273$), it was significantly lower for the religious ($r = .25$; $n = 7,961$) and the nonreligious ($r = .13$; $n = 1,644$) (Huber, 2008a, 2009).

The present results have consequences for the issue of measurement of religiosity as well as the psychological modelling of religiosity. We have presented bivariate analyses and two parallel analyses for the moderating role of centrality on the association between forgiveness by God and forgivingness, one regression model and one analysis using theoretically derived categories of religiosity.

In our study, both moderation analyses yielded similar results. However, we suggest the categorical analysis strategy for comparative research questions as it avoids some problems that may impact regression models. Specifically, we see three possible problematic issues: first is the meaningful estimation of parameters for participants with different levels of centrality of religiosity in bivariate analyses, second the problem of non-attitudes, and third, biased conclusions due to sampling issues.

First, simple bivariate analyses may yield significant correlations that may mask the fact that for individuals with a subordinate position of the religious system the correlation between religious contents with corresponding contents in nonreligious areas is substantially lower than the average correlation as observed in the present investigation. Therefore, simple bivariate analyses on pooled samples do not yield meaningful psychological parameters for different groups of the population. In general, concerning the modelling of religiosity, we thus suggest that in the analysis of the effects of specific religious contents, the centrality of religiosity in personality, i.e., the general effectiveness of the religious personal construct system, should be considered.

A second problem concerns the measurement of non-attitudes (Converse, 1970). In groups with low religious scores, some items may not have much meaning for the participants, and consequently the responses may not reflect actually effective constructs of the participants. Our model takes this into account as it predicts no effect for nonreligious individuals. In the categorical analysis strategy proposed, such non-attitudes may not bias the parameter estimates for the whole sample. Specifically, in cases where for highly religious participants there are high correlations while for participants with subordinate religious system or nonreligious system no correlation exists, i.e., nonlinear associations between centrality and other variables exist, linear moderation analyses may predict meaningless negative correlations for nonreligious participants being pure artefacts of the analysis model.

However, as third factor, sampling plays a crucial role for the interpretation of the parameters reported in previous research. If we acknowledge that firstly religious construct systems may differ in contents and secondly that correlations between religious variables and nonreligious variables depend on the centrality of the religiosity, the distribution of contents and centrality in the populations get a crucial role in the interpretation of the findings. In some cases, especially for homogenous populations, this may pose only a minor problem, in other cases, the correlation between religious and nonreligious variables may be underestimated for the group that is highly religious and overestimated for individuals with low religiosity. All three problems also may have impacted some results of the studies reported in the introduction of this paper. Thus, if possible, re-analyses of the data may gather important additional insights.

In comparative research, sampling is of major importance. For instance, the representative data of the international Religion Monitor indicates that in the US 62% of the population are highly religious, and 27% are religious. In contrast, e.g., only 18% of the German population may be classified as highly religious and 52% as religious, the respective number for France being 13% vs. 41%, and for Great Britain being 19% vs. 44%, respectively (Huber & Krech, 2009, p. 67). This means that while in representative Western European samples in overall analyses the religious group dominate the estimated parameters, in representative US samples are dominated by the highly religious group. Separate analyses for the groups may thus allow conclusions on functional intercultural differences which otherwise may be blurred by or falsely attributed to effects of sampling processes. These considerations reveal that sampling may also account for the differences in correlations and effect

sizes between the investigated concepts we found in our sample compared to these in previous studies.

Several limitations should be considered when interpreting the results of the present study, however. While some concern the underlying theoretical model, some concern the operationalisation of the present research. To our knowledge, the present study is the first to address the differential influence of forgiveness by God and forgivingness dependent on centrality of religion. It has to be taken into account, however, that our study used self-report questionnaires for data collection. Although these are well-validated and self-report data are commonly used in research on forgiveness and religiosity in general, researchers should consider using observer reports and behavioural measures, and experimental manipulations as well, in order to enhance the understanding of the forgiveness process and its relationships to different aspects of religion (cf. Worthington, 2005). Also, the investigation of how forgiveness by God interacts with the way people forgive themselves might be fruitful. Further, theoretically we suggest a directional causal influence of the experience of being forgiven by God on forgivingness dependent on centrality of religiosity. The cross-sectional data of the study, however, empirically allows only statements on correlations. Thus, in future longitudinal studies should help to clarify these relations.

Concerning Huber's (2008a) general model of religiosity, up to now basically data of the present study on the nonreligious topic of forgivingness and on politics are available. The model, however, generally predicts that centrality of religiosity influences the correlation between religious contents and related nonreligious contents. Therefore, we look forward to further research testing the generalisability of the model investigating other religious contents in their relationship to corresponding nonreligious areas of life. We consider especially research on religiosity and mental and physical health as crucial. Pargament specifically highlighted the discrete character of religious contents for religious coping, differentiating 21 scales of religious coping (see, e.g., Pargament, Koenig, & Perez, 2000). These contents should effect religious coping most effective in highly religious individuals.

Finally, a methodological question rises concerning the classification of individuals according to the centrality of their religious construct systems as highly religious, religious, or nonreligious. In the present study (in accordance with Huber, 2008a), we based this classification on the semantics of the answer scales. We have argued that with the classification we do not aim to make ontic statements on individuals, but we want to maximise the probability that a

specific individual is classified according to the position of the religious construct system in personality. The discriminative group differences suggest that our classification was successful. At present, however, on the one hand we may not conclude that our assignment actually maximises the probability for an optimal assignment, and on the other hand, whether this proposed assignment is optimal for other samples, e.g., other religions, or for other research question.

References

Aiken, L. S., & West, S. G. (1991). Multiple regression: Testing and interpreting interactions. Thousand Oaks, CA: Sage.

Allemand, M. (2008). Age differences in forgivingness: The role of future time perspective. Journal of Research in Personality, Vol. 42, 1137-1147.

Allemand, M., Sassin-Meng, A., Huber, S., & Schmitt, M. (2008). Entwicklung und Validierung einer Skala der Bereitschaft zu verzeihen (SBV) [Development and validation of a measure of willingness to forgive]. Diagnostica, Vol. 54, 71-84.

Allport, G. W. (1976). The individual and his religion: A psychological interpretation (14th ed.). New York: Macmillan.

Allport, G. W., & Ross, J. M. (1967). Personal religious orientation and prejudice. Journal of Personality and Social Psychology, Vol. 5, 432-443.

Berry, J. W., Worthington, E. L., Jr., Parrott, L., O'Connor, L. E., & Wade, N. E. (2001). Dispositional forgivingness: Development and construct validity of the transgression narrative test of forgivingness (TNTF). Personality and Social Psychology Bulletin, Vol. 27, 1277-1290.

Bertelsmann Foundation (2009). What the world believes: Analysis and commentary on the Religion Monitor 2008. Gütersloh: Verlag Bertelsmann Stiftung.

Brown, R. P. (2003). Measuring individual differences in the tendency to forgive: Construct validity and links with depression. Personality and Social Psychology Bulletin, Vol. 29, 759-771.

Cohen, J. (1988). Statistical power analysis for the behavioral sciences (2nd ed.). Hillsdale, NJ: Erlbaum.

Cohen, J., Cohen, P., West, S. G., & Aiken, L. S. (2003). Applied multiple regression/correlation analysis for the behavioral sciences (3rd ed.). Mahwah, NJ: Erlbaum.

Converse, P. E. (1970). Attitudes and non-attitudes: Continuation of a dialogue. In E. Tufte (Ed.), The quantitative analysis of social problems (pp. 168-189). Reading: Addison-Wesley.

Edwards, L. M., Lapp-Rincker, R. H., Magyar-Moe, J. L., Rehfeldt, J. D., Ryder, J. A., Brown, J. C., & Lopez, S. J. (2002). A positive relationship between religious faith and forgiveness: Faith in the absence of data? Pastoral Psychology, Vol. 50, 147-152.

Enright, R. D., Santos, M. J. D., & Al-Mabuk, R. (1989). The adolescent as forgiver. Journal of Adolescence, Vol. 12, 95-110.

Glock, C. Y. (1962). On the study of religious commitment. Religious Education, Vol. 57, 98-110.

Gorsuch, R. L., & Hao, J. Y. (1993). Forgiveness: An exploratory factor analysis and its relationships to religious variables. Review of Religious Research, Vol. 34, 333-347.

Huber, S. (1996). Dimensionen der Religiosit.t: Skalen, Messmodelle und Ergebnisse einer empirisch orientierten Religionspsychologie [Dimensions of religiosity: Scales measurement-models and results of an empirical psychology of religion]. Bern: Verlag Hans Huber.

Huber, S. (2003). Zentralit.t und Inhalt: Ein neues multidimensionales Messmodell der Religiosität [Centrality and content: A new multidimensional model for the measurement of religiosity]. Opladen: Leske and Budrich.

Huber, S. (2007). Are religious beliefs relevant in daily life? In H. Streib (ed.), Religion inside and outside traditional institutions: Contributions to the 2nd Conference of the International Society for Empirical Research in Theology (ISERT) in Bielefeld (pp. 211-230). Leiden: Brill.

Huber, S. (2008a, December). Kerndimensionen, Zentralit.t und Inhalt: Ein interdisziplinäres Modell der Religiosität [Core-dimensions, centrality and content: An interdisciplinary model of religiosity]. Journal für Psychologie, Vol. 16 (3), Article 05. Retrieved 10 December 2008, from http://www.journal-fuer-psychologie.de/jfp-3-2008-05.html.

Huber, S. (2008b): Der Religiositäts-Struktur-Test (R-S-T): Systematik und operationale Konstrukte [The Structure-of-Religiosity-Test (S-R-T): Taxonomy and operational constructs]. In W. Gr.b & L. Charbonnier (Eds.), Individualisierung—Spiritualität—Religion: Transformationsprozesse auf dem religiösen Feld in interdisziplinärer Perspektive (pp. 137-171). Münster: Lit-Verlag.

Huber, S. (2009). Religion Monitor 2008: Structuring principles, operational constructs, interpretive
strategies. In Bertelsmann Foundation, What the world believes: Analysis and commentary
on the Religion Monitor 2008 (pp. 17-51). Gütersloh: Verlag Bertelsmann Stiftung.

Huber, S. & Krech, V. (2009). The religious field between globalization and regionalization: Comparative perspectives. In Bertelsmann Foundation (Ed.), What the world believes: Analysis and commentary on the Religion Monitor 2008 (pp. 53-93). Gütersloh: Verlag Bertelsmann Stiftung.

Krause, N., & Ellison, C. G. (2003). Forgiveness by God, forgiveness of others, and psychological well-being in late life. Journal for the Scientific Study of Religion, Vol. 42, 77-93.

Krech, V. (2006). Wohin mit der Religionswissenschaft? Skizze zur Lage der Religionsforschung und zu M.glichkeiten ihrer Entwicklung [Where to go with religious studies? Current status of religious studies and future directions]. Zeitschrift für Religions- und Geistesgeschichte, Vol. 58, 97-113.

Macaskill, A. (2005). Defining forgiveness: Christian clergy and general population perspectives. Journal of Personality, Vol. 73, 1237-1265.

McCullough, M. E., Hoyt, W. T., & Rachal, K. C. (2000). What we know (and need to know) about assessing forgiveness constructs. In M. E. McCullough, K. I. Pargament & C. E. Thoresen (Eds.), Forgiveness: Theory, research, and practice (pp. 65-88). New York: Guilford.

McCullough, M. E., & Worthington, E. L., Jr. (1999). Religion and the forgiving personality. Journal of Personality, Vol. 67, 1141-1164.

McCullough, M. E., & Witvliet, C. V. (2002). The psychology of forgiveness. In C. R. Snyder & S. L. Lopez (Eds.), Handbook of positive psychology (pp. 446-458). New York: Oxford University Press.

Mullet, E., Barros, J., Frongia, L., Usa., V., Neto, F., & Shafighi, S. R. (2003). Religious involvement and the forgiving personality. Journal of Personality, Vol. 71, 1-19.

Mullet, E., Houdbine, A., Laumonier, S., & Girard, M. (1998). ''Forgivingness'': Factor structure in a sample of young, middle-aged, and elderly adults. European Psychologist, Vol. 3, 289-297.

Pargament, K. I., Koenig, H. G, & Perez, L. (2000). The many methods of religious coping: Development and initial validation of the RCOPE. Journal of Clinical Psychology, Vol. 56, 519-543.

Poloma, M. M., & Gallup, G. H. (1991). Varieties of prayer. Philadelphia: Trinity Press International.

Rye, M. S. (2005). The religious path toward forgiveness. Mental Health, Religion & Culture, Vol. 8, 205-215.

Rye, M. S., Loiacono, D. M., Folck, C. D., Olszewski, B. T., Heim, T. A., & Madia, B. P. (2001). Evaluation of the psychometric properties of two forgiveness scales. Current Psychology, Vol. 20, 260-277.

Rye, M. S., & Pargament, K. I. (2002). Forgiveness and romantic relationships in college: Can it heal the wounded heart? Journal of Clinical Psychology, 58, 419-441.

Stark, R. (1965). A taxonomy of religious experience. Journal for the Scientific Study of Religion, Vol. 5, 97-116.

Stark, R., & Glock, C. (1968). American piety: The nature of religious commitment. Berkeley and Los Angeles: University of California Press.

Toussaint, L. L., Williams, D. R., Musick, M. A., & Everson, S. A. (2001). Forgiveness and health: Age differences in a U.S. probability sample. Journal of Adult Development, Vol. 8, 249-257.

Tsang, J.-A., McCullough, M. E., & Hoyt, W. T. (2005). Psychometric and rationalization accounts of the religion-forgiveness discrepancy. Journal of Social Issues, Vol. 61, 785-805.

Walker, D. F., & Gorsuch, R. L. (2002). Forgiveness within the big five personality model. Personality and Individual Differences, Vol. 32, 1127-1137.

Worthington, E. L., Jr. (2005). Handbook of forgiveness. New York: Routledge.